# Gemini
## PK2600

- *Panel designed to meet NEMA 4 water resistance standards*

- *320 x 240 (1/4 VGA) graphic LCD with adjustable contrast and CCFL backlighting*

- *8 x 8 transparent touchscreen overlay*

- *Storage for up to 50 bitmap screens and hundreds of display lists.*

- *8 conditioned and 2 unconditioned 12-bit analog inputs*

- *16 digital inputs, 16 high-current outputs*

- *PLCBus™ expansion port*

- *3 serial ports (RS-232, RS-485)*

The PK2600 is a C-programmable system with a built-in 320 x 240 (1/4 VGA) touchscreen display. The display has a large storage area for bitmaps, display lists and screens. The PK2600 is ideal for control systems that require an interactive graphic interface.

The PK2600 comes standard with 16 protected digital inputs and 16 high-current sinking outputs. The sinking outputs can be converted to sourcing outputs using the optional sourcing driver kit.

The PK2600 has 8 conditioned and 2 unconditioned 12-bit analog input channels. Each input has socketed bias and gain resistors and an op-amp for signal conditioning.

The PK2600 has 3 serial ports. Port 1 is 5-wire RS-232. Ports 2 and 3 can be either RS-485, 5-wire RS-232, or support DMA. The PK2600 also has a PLCBus™ expansion port, allowing you to add additional functionality.

The PK2600's bezel offers protection of the front panel. The digital, analog, and serial I/O ports are accessible via DB25 and DE9 connectors on the rear of the protective enclosure.

## Programming the PK2600

The PK2600 is C-programmable using the Dynamic C® 32 software development system described on page 6.

There are two methods for programming the PK2600. The display comes pre-loaded with our Graphics Engine, which enables the display to be easily programmed through Port 1 of the SBC. To reserve Port 1 for your application or to program the display directly, our Serial Interface Board is available.

### Gemini Tool Kit

The Gemini PK2600 Tool Kit contains all the hardware tools necessary for rapid development: manual, schematics, programming cables, AC adapter, sourcing high-current driver, and mounting hardware.

## PK2600 Specifications

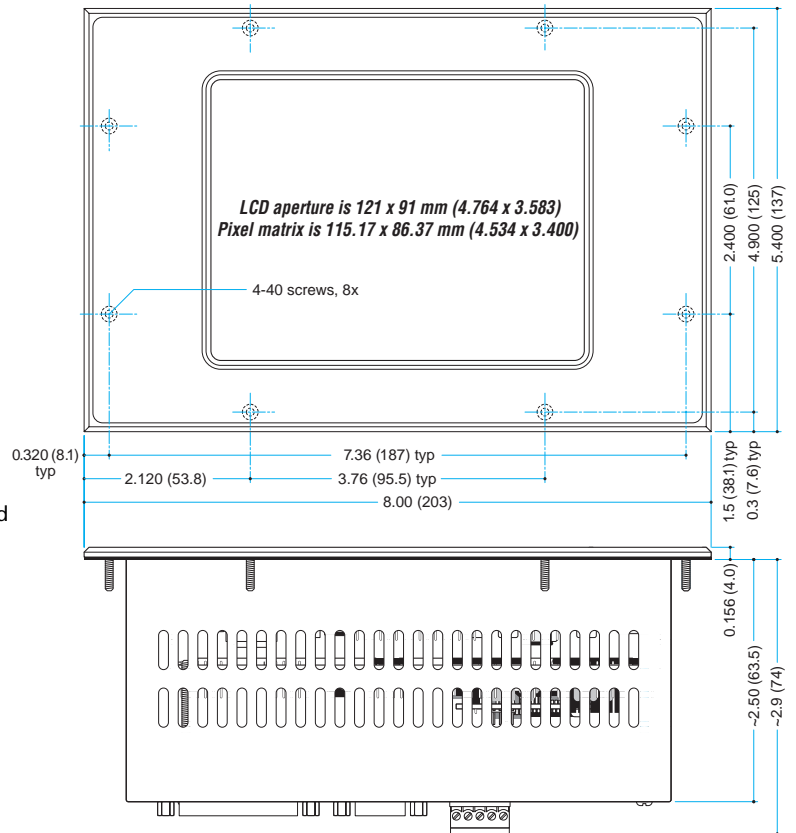| | |
|---|---|
| Bezel Size | 5.4" x 8.0" x 0.156" with gasket |
| Enclosure Size | 4.511" x 6.930" x 2.50" |
| Operating Temp. | 0°C to +50°C |
| Storage Temp. | –20°C to +70°C |
| Humidity | 25–65% non-condensing |
| Power Requirements | 15–30 V DC, 8.7 W with backlight on, 5.7 W with backlight off |
| Digital Inputs | 16, continuous operation from –20 V to +24 V. Logic threshold at 2.5 V. Protected against spikes in the range ±48 V. 10K pull-up or pull-down |
| Digital Outputs | 16 high-current. At 25°C, a channel can sink up to 500 mA continuously. Output is subject to package power limits and duty cycle. Load limit is 48 V. Sourcing outputs optional |
| Analog Inputs | 8 conditioned and 2 unconditioned 12-bit channels. Up to 3,500 samples/sec. TLC2543. Factory configured for a 0–10 V range |
| Analog Outputs | PWM, 4–7 channels using digital outputs |
| Processor | (SBC) Z180 at 18.432 MHz (Display) Z180 at 18.432 MHz |
| SRAM | (SBC) 32K (supports up to 512K) (Display) 128K (supports 512K) Surface mount |
| Flash EPROM | (SBC) 128K (supports 256K) (Display) 256K for code, 256K for data/image storage. Surface mount |
| EEPROM | 512 bytes |
| Counters | 2 in software |
| Serial Ports | Port 1 is 5-wire RS-232. Ports 2 and 3 can be RS-485 or 5-wire RS-232. Selected baud rates up to 57,600 bps |
| Watchdog/Supervisor | Yes |
| Time/Date Clock | Yes |
| Backup Battery | Two 3 V lithium coin-type batteries, 165 mA·h and 190 mA·h |
| Keypad and LCD | STN, 320 x 240 pixels, blue on white background. Pixel matrix is 115.2 x 86.4 mm (0.36 mm pitch). Aperture in bezel is 121 x 91 mm (4.76" x 3.58"). Software-adjustable contrast. Cold-cathode fluorescent backlight with software control (on/off) |
| Expansion Port | PLCBus™ |

## Options and Upgrades

**SIB2.** Serial Interface Board. Allows programming through the special programming ports on the PK2600, leaving other serial channels available. Includes programming cable
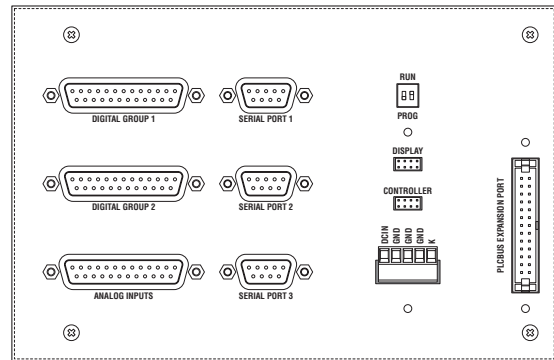
**Sourcing Driver Kit.** Provides 2 (2985) sourcing driver chips. At 25°C, a channel can source up to 250 mA continuously. Output subject to package power limits and duty cycle. Load limit 30 V

**SRAM.** 128K or 512K. Factory installed

**Flash EPROM.** 256K. Factory installed



LCD aperture is 121 x 91 mm (4.764 x 3.583)
Pixel matrix is 115.17 x 86.37 mm (4.534 x 3.400)

4-40 screws, 8x

*PK2600 Dimensions*



*PK2600 Back View of connectors*